

2010 Automotive Engineering Excellence Awards

Local suppliers specialising in safety and composite materials were among the winners in the thirteenth **Society of Automotive Engineers – Australasia Automotive Engineering Excellence Awards.**

Society President Patrick Ross said outstanding engineering innovation is the key enabler to sustaining a revitalisation in the Australian automotive industry. “SAE-A recognises the importance of local vehicle manufacture in terms of the physical and financial infrastructure it provides for local engineering in components, services, production and design,” he said.

“The entries for the 2010 Awards reflect the strength and innovation of automotive engineering in Australia. They are testament to an industry that has proven itself resilient in weathering a critical period, while remaining focused on a brighter future.

“The SAE-A Automotive Engineering Excellence Awards are important because they provide benchmarking and recognition opportunities among local peers. They are also significant because they showcase our innovation on the competitive global stage.

“Society members congratulate the 2010 winners and wish them well in maximising the potential of their innovations. Next year, we want every business in the automotive industry to consider submitting an entry,” said Ross.

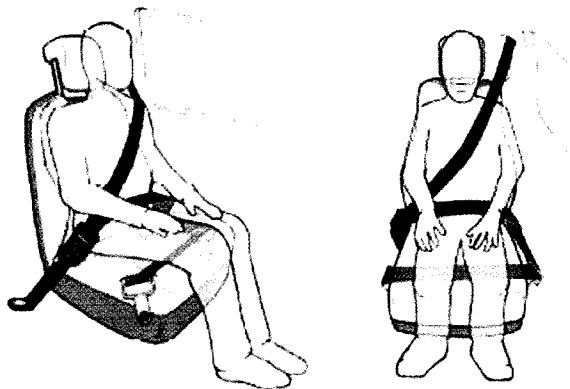
Gold Award - LifeBelt

The LifeBelt – an innovative development of current seat belt restraint systems – was the 2010 Gold Award winner.

LifeBelt incorporates an under the thigh length of webbing (lower lap) that is continuous with the lap webbing (now upper lap). This extra webbing is positioned between the seat fabric and foam that together rest on the sturdy seat frame. The lower lap sits forward of the upper lap and acts as an anti-submarining device when tightened by the upper lap restraining the pelvis.

This anti-submarining device is a new paradigm in seatbelt safety and function. All components of the belt are freely movable through a series of slip rings, so the belt can dynamically and synergistically balance the immense forces during a collision.

This product innovation is attracting attention from seat belt, seat and vehicle manufacturers seeking improved seat belt



The key to the LifeBelt design is the additional continuous webbing, which passes under the thighs to act as an anti-submarining device.



Representing Gold Award winner LifeBelt, proud Lino Fusco addressed the crowd – and delighted SAE-A President Patrick Ross, who presented the trophy.

performance and safety with harm and fatality reduction for all, especially children.

LifeBelt is a pre revenue business start up funded by shareholder equity that was recently awarded an Australian Federal Government Grant through the AusIndustry Commercialising Emerging Technology program.

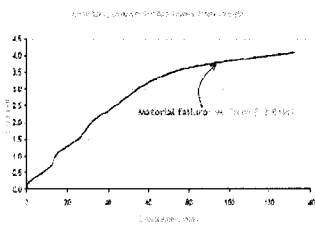
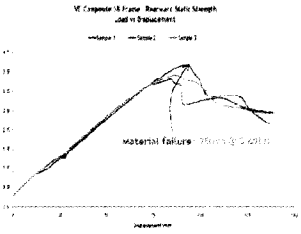
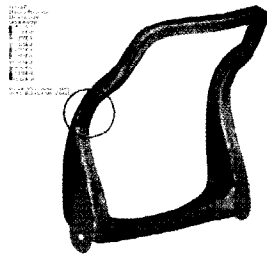
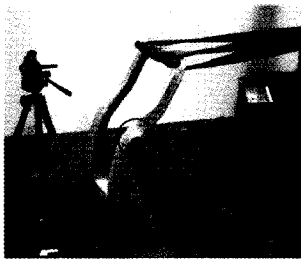
Silver Award - Futuris Automotive Interiors

The Silver Award recognised the Futuris Automotive Interiors entry on the application of 3D knitted composite structures for light weight automotive interior products.

Initially focused on vehicle seating, the entry is based on work by Futuris and AutoCRC collaborating with the CSIRO and Deakin University.



Prof Harry Watson presented the Silver Award to Jason Miller of Futuris.



Initial feasibility studies proved the composite material would meet severe safety load requirements – quasi-static loading of >2.5kN applied at the top cross beam with the part fixed about the recliner axis. The mass of this first prototype part was 50% of the equivalent steel structure.

To produce the seat a composite “shell” is created by knitting a reinforcing fibre that is engineered with a specific knit construction in the load paths of the structure. This is combined with thermoset resin and inflated in a mould to make the part take its shape.

Traditional automotive seating systems are built around complex multi-piece, welded steel seat frames that are “trimmed” with moulded foam and fabric. This new low cost composite technology enables the integration of trim and structural components providing significant opportunities to reduce weight. The design flexibility, improved performance and the unique composite manufacturing process delivers significantly reduced capital and unit cost.

This technology creates an opportunity to position Australia as a world leader in lightweight, low cost composite structures. The potential market for such structures is large and could capture a significant segment of the multi-billion dollar global automotive market. The technology could also be applied to other industries such as marine, aerospace and civil structures markets.

Bronze Award - Autoliv Australia

The Bronze Award winner is Autoliv Australia for its Transparent Engineering Process (TEP).

TEP is an advanced approach to product development and continuous improvement targeting excellence in customer service, innovation, project management and personnel management.

The uniqueness of TEP is that the process is based on the lean manufacturing principles, but applies them in an



SAE-A Director Tim Car presented the Bronze Award to Autoliv's Andrew Baldechino.

innovative and effective manner to the research, product design and development cycle.

Young Engineer Award

The 2010 Young Engineer Award is University of Melbourne Research Fellow Dr Rahul Sharma.

Trained as an electrical engineer and based in the Department of Mechanical Engineering, Rahul Sharma is the Research Fellow supporting an Engine Control Program, which is part of a multi-million dollar hydrogen fuelled internal combustion engine project.

This collaborative project includes the University of Melbourne, Ford Motor Company of Australia and the Victorian Government, through an Energy Technology Innovation Strategy grant. The project also includes Combustion Engine and Hydrogen Storage Programs.

Rahul Sharma's Engine Control Program work focused on systematic and versatile procedures for developing and simplifying a physics-based mathematical engine model, which can facilitate the formulation of new control algorithms by using advanced mathematical and numerical analysis techniques and electrical and mechanical engineering methods.

Rahul has already made substantial contributions to automotive research in Australia and internationally. The SAE-A is proud to make the Young Engineer Award available, through the generous sponsorship of the RACV.

Automotive Australia 2020 project

The very high standard of applicants for the SAE-A Young Engineer Award was exemplified by runner up Tom Woods, who was Researcher to the Automotive Australia 2020 project. Based at the Australian National University, he made a major contribution to the small team that developed a technology roadmap for the Australian automotive industry.

SAE-A 2011 Award entries

Entries to the SAE-A Automotive Engineering Excellence Awards and Young Engineer Awards are accepted from all automotive engineering organisations meeting the criteria. Plan your entry now and contact SAE-A Events Manager Marissa Mascaro (Ph: 03 96965190 or email: marissa@sae-a.com.au) to request an entry form.

About SAE-A

The Society of Automotive Engineers – Australasia (SAE-A) promotes excellence in automotive engineering and is committed to the protection and betterment of the environment. Its members are engineers, scientists and technicians working across the entire spectrum of the Australasian automotive industry

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Representing RACV, as sponsor of the SAE-A Young Engineer Award, Chief Engineer Michael Case presents 2010 winner Dr Rahul Sharma with his trophy.